

MEETING NOTES
Waste Management Area C Work Plan Revisions

Meeting Date: May 26, 2011

Location: 1200 Jadwin, Richland

Purpose: Discuss the Status of the Waste Management Area (WMA C) RFI/CMS Investigation and Work Plan.

Attendees:

Heather Anastos (WRPS)	Stuart Luttrell (CHPRC)
Mike Barnes (Ecology)	Jeff Lyon (Ecology)
Marcel Bergeron (WRPS)	Dave Myers (WRPS)
Susan Eberlein (WRPS)	Julie Robertson (WRPS)
Les Fort (WRPS)	Harold Sydnor (WRPS)
Dan Glaser (WRPS)	Greg Thomas (CHPRC)
Bob Lober (ORP)	

Background: These monthly meetings provide a forum for Ecology and ORP project managers and technical support personnel to review information generated by the WMA C RCRA facility investigation, and to determine whether changes to the characterization plans and/or the RFI/CMS work plan (RPP-PLAN-39114) are necessary. Comments and questions from EPA and Ecology about the WMA C RFI work scope are also discussed at the meetings. Meeting notes are approved by the Ecology and ORP project managers and entered into the Administrative Record. If the parties agree that changes to the Work Plan are appropriate, the *Hanford Federal Facility Agreement and Consent Order* (TPA) change control process will be used to document Work Plan changes.

Discussion and New Topics:

- **Prior meeting notes:** The April 28, 2011 meeting notes were signed by the ORP and Ecology Project Managers.
- **Status of the Work Plan:** Revisions of the WMA C RFI/CMS work plan and SAP to incorporate previously discussed changes are in progress. Current efforts are focused on completing revisions to the SAP. Those revisions will then be incorporated, with other necessary changes, into the work plan.
- **Status of Ongoing Fieldwork:**
 - RPP-PLAN-39114, Rev 1A, Figure 6-1 identifies that in FY 11, four direct push locations will be completed. This commitment is expected to be completed by doing angle pushing at the following locations:
 - Location J (near Tank C-104)
 - Location A (near Tank C-101)
 - Location B (near Tank C-101)
 - Location C1 (near C-203).

Angle push work at Site J (C-104) is complete, and the borehole has been decommissioned. At Site A (C-101), logging is complete and the initial borehole has been decommissioned with probes in place. Direct push of the sampling borehole is underway. At Site B (C-101) approximately 44 feet of pipe run were pushed, then the rig met refusal. The location was decommissioned, the rig was relocated slightly, and borehole installation will begin again when weather conditions permit. Work at Site C1 (C-203) is in planning.

- Surface geophysical exploration (SGE) data from Site Q (UPR-82/cesium pile) are being analyzed.
- Prepared biological samples have been delivered to the appropriate laboratories for analysis. Isotopic thorium results were reported to be less than detection level.
- **Data Status:**
 - All 2009 and 2010 WMA C vadose zone data are loaded into HEIS. The 2010 data is approximately half way through the data validation and verification process.
 - Ecology requested additional information on a recent discussion between RL and Ecology regarding the use and applicability of the DOECAP Quality Systems for Analytical Services (QSAS) vs. the Hanford Analytical Services Quality Assurance Requirements Document (HASQARD). It was discussed that the on-site laboratories work to the HASQARD, while the commercial laboratories are audited to the DOECAP requirements. WRPS took an action to follow up with Ecology to better understand the questions and provide additional information.
- **New Topics:**
 - **Sites K and V:** WRPS has initiated FY2012 investigation work planning, including installation of direct push boreholes and Sites K and V. Reconnaissance indicates that it may be impossible to install vertical direct pushes at the desired locations due to field interferences (i.e., buried pipelines and other infrastructure). For Site K near C-108, WRPS will be evaluating the location of the postulated leak and available spectral gamma logging system and SGE information to determine if an angled borehole could be drilled to intercept the location. If it is determined that an angle push cannot be placed to intercept the postulated leak location, investigation using additional SGE will be evaluated.

Installation of a direct push borehole at Site V was intended to provide information about a postulated release from tank C-111 (waste released through the tank spare inlet ports due to overfilling of the tank). However, recent detailed leak loss analysis concluded that although tank C-111 was overfilled, there was no evidence that a release of waste had occurred via the spare inlet ports. In the near future, the Tank Leak Loss Committee will ensure that the current tank C-111 leak assessment is still viable. The meeting attendees agreed that if the Tank Leak Loss Committee concludes there is no evidence of releases via C-111 spare inlet ports, a borehole at Site V would be unlikely to provide information valuable to the WMA C investigation.

 - **Ecology Questions on Quarterly Groundwater Report:** On May 25, 2011, Ecology emailed several questions to ORP regarding the Quarterly Groundwater Monitoring Report. The meeting attendees reviewed the questions, Ecology provided clarification as needed, and some preliminary responses were provided. The questions are entered as action items for this meeting, and provision of final responses will be tracked on the action list.

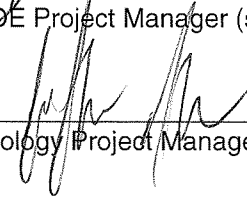
Actions:

- **Refer to the following table.** A date-based numbering system is being used to track the actions to completion. Actions will be removed from the list after ORP and Ecology have agreed to their completion.

Robert Lober
DOE Project Manager (print)

Jeffery J Lyon
Ecology Project Manager (print)


DOE Project Manager (signature)


Ecology Project Manager (signature)

6/23/2011
Date

6/23/2011
Date

Actions

Item No.	Topic for Consideration	Action required	Actionee	Impact on WP	Status
08-11-10-3	Conceptual model for spare inlet overflow – important for C-105	Impact and locations of potential overfill spills should be evaluated near C-101, -105, and -110 and text included in WP.	J. Robertson	Include info in next WP revision	In process.
08-11-10-5	Organic issue and status what has been agreed to on the 5 locations for organics... any TIC data?	(1) Provide Ecology with detailed status of organic results to support evaluation of need to continue sampling. Modify WP as appropriate. (2) Provide EPA with copy of Ecology authorization dated 02/11/2011.	M. Barnes	Update WP and SAP to reflect revision of analyte list.	Work plan & SAP modification in process. VOC results were presented at 10/27/2010 meeting, along with recommendations. Additional results were provided in Feb 2011, and on 02/11/2011, Ecology provided authorization by email to optimize sampling by discontinuing sampling for VOCs, ethylene glycol, mono and di butyl phosphate, PCB congeners, and gas and diesel range organics. The reduction will result in additional sample material being available for improved analysis of the remaining analytes. ORP issued a letter on 03/23/2011 documenting recommendations and requesting a response. Ecology response is in the approval process.
08-11-10-8	C-200s proposal for SGE and logging E27-7...	(1) Update WP text regarding specific wells to be logged. (2) Place several deep electrode strings/do SGE near C-200 tanks, in later FY11. Not currently in budget. (3) Locate/review existing paper on C-203 leak.	(1) J. Robertson (2) M. Barnes review initial SGE proposal discussed at 05/26/2011 meeting and provide comments (3) M. Barnes, B. Lober, L. Fort	Include info in next WP revision regarding known in-scope changes	(1) In process (2) Initial proposal provided for Ecology consideration on 5/26/2011 (3) <New action.>
08-11-10-9	What is planned for E27-23	There is a well on SW side of C Farm near transfer line. Need to investigate a Tc-99 increase. (1) Archive samples from drilling of E27-20 are available for analysis. (2) WRPS and CHPRC to review recent GW data to determine whether	D. Myers, G. Thomas, M. Barnes	Possible future WP change	(1) WRPS developing scope and cost to analyze E27-20 archive samples (2) WRPS and CHPRC are reviewing recent GW data in order to develop a recommendation.

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		additional investigation is advisable.			
08-11-10-11	Status of availability of C-111 push (Site V)	Revise WP to change designation of Access Availability in tables from "good" to "constrained by retrieval operations." Similarly update other access information to reflect current state.	J. Robertson	Include info in next WP revision.	In process.
08-11-10-Q4	Do you want to update the analyte list based on changes to RPP-23403, Rev. 4 (sulfide)?	SST DQO has been modified to remove sulfide. Need to evaluate removal of sulfide from C Farm DQO and if appropriate revise analytes in WP.	M. Barnes	Update WP and SAP to reflect revision of analyte list.	Work plan & SAP modification in process. On 02/11/2011, Ecology provided authorization by email to optimize sampling by discontinuing sampling for sulfide. The reduction will result in additional sample material being available for improved analysis of the remaining analytes. ORP issued a letter on 03/23/2011 documenting recommendations and requesting a response. Ecology response is in the approval process.
10-23-10-1	Detection limits	Evaluate whether detection limits identified in WP are appropriate.	J. Robertson	Revise Se RDL to 0.3 mg/kg in WP and SAP.	In process.
01-27-11-3	Cs at C-105	Evaluate options for additional investigation to gain information about the volume of releases from C-105 and the amount of Cs released. (1) Install temperature probes in drywells (2) Install new direct push borehole near C-105 to intersect postulated plume	H. Sydnor, L. Fort	None at this time.	(1) WRPS evaluated installation of temp probes in dry wells. At C-105, the Cs would not be expected to travel very far from the tank. Any temp difference caused by a leak would be masked by the greater mass of and heat from Cs still in the tank. (2) WRPS is evaluating feasibility of installing a direct push borehole to intersect postulated plume.
01-27-11-4	Resolution of EPA comments on RFI/CMS work plan	See Attachment A.	See Attachment A.	See Attachment A.	See Attachment A.
04-28-11-1	Method to be used for Cr analysis in bio samples	Email B. Rochette of Ecology to explain the issue and request use of Method 200.8 instead of 6010.	J. Robertson	Update WP App B to reflect method change	Ecology authorized use of the alternative method, Method 200.8, for chromium in the bio samples. WP change is in process.

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04-28-11-2	Poor quality data from a lab that performed pesticide analyses	Contact Office of Sample Management (SMO) to advise them of WMA C pesticide data quality issues, to flag the need for evaluation of possible broader implications across the Site.	H. Anastos	No change required.	<CLOSE> SMO was contacted and is aware of the data quality issues associated with the lab that performed the WMA C pesticide analyses. This lab has not provided this type of analytical support to other Hanford projects.
05-26-11-1	Replacing HASQARD with DOECAP Quality System for Analytical Services	WRPS to discuss further with Ecology (M. Barnes) to better understand the questions and provide additional information.	H. Anastos	None at this time.	<New action.>
05-26-11-2	FY12 borehole installation at Sites K and V	(1) Evaluate ability to install borehole to intercept postulated plume at Site K. (2) Re-evaluate need for Site V borehole, pending issuance of Tank Leak Loss Committee conclusions.	H. Sydnor, L. Fort	None at this time	<New action.>
05-26-11-3	Quarterly GW Monitoring Report, Iodine-129: Results are given for 5 wells in WMA C all hits including E27-25 which is spatially removed from WMA C. This well E 27-25 has a no detect for technetium-99. What are the varying interpretations of the significance of iodine and no technetium. The wells reported were 12, 155, 22, 23, and 25.	Provide information regarding possible sources of Tc-99 and iodine in the sampled wells.	G. Thomas/S. Luttrell	None at this time	<New action.>
05-26-11-4	Quarterly GW Monitoring Report, Temperature Results: Is it normal for the temperature in the groundwater at WMA C to vary from 15.6C to 19.1C? Is this variation noted in other tank farms?	Evaluate temperature variations in the GW at WMA C and other tank farms to determine if there is an anomaly at WMA C.	G. Thomas/S. Luttrell	None at this time	<New action.>
05-26-11-5	Quarterly GW Monitoring Report, Technetium: Why were samples from wells E27-13 and E27-4 not reported for technetium? I note samples were taken	Evaluate Tc-99 data set and provide information regarding <ul style="list-style-type: none"> • Sampling frequency and basis for sampling frequency. • Data trends • G review qualifier 	G. Thomas/S. Luttrell	None at this time	<New action.>

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	and reported for most other analytes. Are there any changes to trends of technetium-99 in any of the WMA C wells? What does the G review qualifier mean for E27-12 for technetium?				
05-26-11-6	Quarterly GW Monitoring Report, Sulfate: There are widely varying concentrations of sulfate in the groundwater (114,000 ug/L to 300,00 ug/L). Is this consistent with results from the vadose zone sampling? How could a wide variation of sulfate in the vadose zone impact the results and interpretation of SGE?	<ol style="list-style-type: none"> 1. Are varying sulfate concentrations in GW consistent with VZ sample results? 2. Does VZ sulfate variation impact SGE results/interpretation? 	G. Thomas/S. Luttrell; Dave Myers	None at this time	<New action.>
05-26-11-7	Quarterly GW Monitoring Report, Organics: If sample or analytical contamination was suspected; why weren't the wells immediately re-sampled? Is there a process that allows for immediate evaluation of suspect results and re-sampling?	Provide information about the process used when suspect GW results are reported.	G. Thomas/S. Luttrell	None at this time	<New action.>

ATTACHMENT A
Open EPA Comments on the WMA C Work Plan
(2 pages)

Background: In December 2010, EPA provided comments on the WMA C RFI/CMS work plan. The table below identifies comments that remain open. Closure of comments not shown below is documented in previous meeting notes.

No.	EPA Comment	Response	Actionee	Status
4.	Section 3.4.1, page 3-30. Please remove the section on EPA anticipated Central Plateau exposure scenarios as we have had no discussion with DOE on exposure scenarios in regard to this document.	EPA will provide replacement text for discussion and incorporation.	J. Robertson	EPA will provide suggested replacement text. On 03/24/2011, WRPS proposed replacement text. On 03/28/2011, EPA accepted the proposed text. Text will be incorporated into next WP revision.
6	Figure 3-7, p 3-15 Needs compass.	Acknowledged.	J. Robertson	Compass will be added to figure, assuming the addition does not present a document clearance and public release issue.
8	Is the Phase II RFI/CMS Report for WMA C still due to Ecology on 12/31/2010? Will this be available to EPA?	Under revised TPA milestone M-45-61, the Phase 2 RFI/CMS report for WMA C is now due to Ecology for review and approval as an Agreement primary document on 12/31/2014. However, baseline planning calls for earlier submittal. The document will be available to EPA.	J. Robertson	The next revision of the work plan will reflect the revised TPA milestone date for M-45-61.
11.	Do holes from direct push investigations lead to preferential flow paths in the future? How many years ago were the first direct push investigations done in WMA C and have they led to channeled infiltration?	Boreholes from direct push investigations do not create preferential flow paths. Boreholes are decommissioned per requirements of Washington Administrative Code (WAC) 173-160. Any exceptions must be reviewed and approved by Ecology as a part of a variance filing process. Direct push investigations at WMA C were initiated in July 2005.	B. Lober	No text change required. Ecology has provided EPA with information on borehole decommissioning requirements. ORP to follow up with EPA to seek closure.
13.	As sampling efforts may have evolved through the execution of this workplan, these are a few specific spots I had questions about: (a) Two valve boxes, located on the south side of C-111 and C-112, are known to have drained directly to soil. Samples taken here? (b) Section 3.2.1, p. 3-6 (d) Anomalous resistivity zone centered around C-104 and a smaller zone around C-108 and C-109. Confirmation sampling done here? (c) Section 3.2.2, p. 3-11 and 3-12 describes Tc ⁹⁹ concentration that have "generally	(a) The valve boxes were not identified as a location to investigate during the DQO process: therefore, no samples are planned at C-111 and C-112. (b) Reanalysis of well-to-well resistivity data, implementing recent advancements in analytical capabilities, indicates that the anomaly around C-108 and C-109 was an artifact of having to parse the data to perform the original analysis. The reanalysis also indicated that the anomaly in the vicinity of C-104 is more closely focused on the region near the spare inlet ports on C-101. Direct	WMA C Team	No text change required at this time. GENERAL ACTION: Carry additional characterization proposals for consideration. (b) Evaluate further when results of reanalysis of SGE data are available. (c) The draft 2010 groundwater monitoring report contains information that could be relevant to an evaluation of the need for further Tc-99 investigation. The final report should be released in summer 2011.

	<p>increased" since the late 1990s and are currently in excess of 2000pCi/L, which "suggests a tank waste source near monitoring well 299-E27-4". Adequate sampling in this area?</p> <p>(d) Section 4.3.2, p. 4-8 (c) Site 200-E-115 Are there plans to use SGE in this area?</p>	<p>push investigation at Sites J and K is intended to provide additional information about the anomalies.</p> <p>(c) The planned investigative work is believed adequate to address the Tc-99 issue. Work at UPR 81 and 86, which were believed to have been potential sources, indicates these UPRs are not likely to be sources.</p> <p>Well 299-E27-4 is in the vicinity of UPR-200-E-82. To further assess potential vadose zone contribution to the Tc-99 present in groundwater at 299-E27-4, the site will be assessed using 3-D SGE, plus three long 2-D lines in 2011. Numerous direct push sampling holes around this UPR have been advanced; only one of those pushes resulted in a positive analysis for Tc-99, and that hole was an angle push directly beneath the UPR site (radiological concerns precluded a vertical push through the center of the UPR). The SGE survey is intended to assess the distribution of resistivity impacting features.</p> <p>(d) Yes. Investigation at sites H and I is intended to provide information in this vicinity. There is no indication of contamination at these locations with sampling completed thus far. Planning includes conducting SGE surveys in this area after retrievals are complete.</p>		